

Serial No. 10/828,745
Amdt. Dated June 9, 2007
Reply to Office action of May 10, 2007

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-30. (canceled)

31. (currently amended) A system for measuring position determining the GNSS-defined positions of first and second points fixed relative to each other and in close proximity comprising on a structure, which system comprises:

at least one a first GNSS receiver;

a first antenna located at the first point on the structure and in operable communication with said first GNSS receiver and configured to receive a first plurality of satellite signals;

a second GNSS receiver;

a second antenna located at the second point on the structure and in operable communication with one of said GNSS receiver or a said second GNSS receiver and configured to receive a second plurality of satellite signals;

said antennas having known and fixed locations relative to each other;

an orientation device adapted for determining a relative an orientation of said system based on the locations of said antennas relative to each other structure;

a common clock utilized by said one or more first and second receivers; and

a position solution processor adapted configured for compensating for a non-receiving condition of one of said antennas and determining an earth fixed position utilizing signals from at least three satellites, the GNSS-defined positions of said first and second points based on: (1) at least one of said satellite GNSS signals received by

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one of said antennas and input to said position solution processor; is received by said first antenna and not by said second antenna, said signals being received by both of said antennas and said processor using (2) an input signal from said clock to said position solution processor; and (3) an input signal from said orientation device the known relative orientation of said points; and
a structure attitude determining processor for determining the attitude of the structure based on: (1) the determined GNSS-defined positions of said first and second points; and (2) the orientation of the structure.

32-34. (canceled)

35. (new) The system according to claim 31 wherein said orientation device comprises a compass.

36. (new) The system according to claim 31 wherein said structure comprises a vessel.

37. (new) The system according to claim 31 wherein said structure is terrestrial.